Presenter: Bill Liszka, Superintendent of Public Works

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Thank you for allowing the Village of Manhattan to provide comments on the proposed regulations.

First of all, the proposed regulations would impose an economic hardship on the Village of Manhattan during an economically challenging period and prevent reuse of beneficial resources. Because the biosolids contain useful nutrients, the material is hauled to farmers' fields and land applied to the areas where crops are grown. This results in a win-win situation for both the village and the farmers. Currently the farmers have typically negotiated long term contracts with biosolids haulers to utilize the biosolids for their field over a number of years. However, IEMA's proposed regulations will restrict this practice to the point where it is no longer practical for the farmers to utilize the biosolids. This is because the number of land applications to the farmers' fields will be reduced from numerous applications over a period of consecutive years to a few applications in a year or two (or even only one application for some communities). Obviously, the farmers will not be interested in the hassle of negotiating a contract for biosolids use for just a few applications. Other significantly more expensive means of sludge disposal will be required when land application is no longer an option.

Second, the scientific modeling conducted by other municipalities has proven that a proposed radium limit of 1.0 pico-curies per gram will result in adequate protection of public health and continue the current practice of long term beneficial biosolids reuse by farmers. The Village of Manhattan supports this modeling, the associated ALARA analysis, and the resulting radium limit of 1.0 pico-curies per gram. The overly restrictive radium limit of 0.4 pico-curies per gram proposed by IEMA is based on flawed scientific modeling with unsupported and excessively conservative modeling assumptions that unnecessarily restrict radium concentrations.

Third, we have performed an analysis to determine the potential impact of the proposed radium regulations. It should be noted that our analysis is based on one sludge sample tested. The radium testing method takes over a month per test, so we were only able to acquire the results from one sample before this meeting. We would feel more comfortable with additional sampling results with which to run our impact analysis, but the tight deadline imposed prevented us from acquiring additional data. Furthermore, Manhattan's second radium water treatment plant is about to go online, and it is unclear how the village's sludge radium concentrations will be affected once the second plant is operational.

Given the above uncertainties, we performed a sensitivity analysis to determine the potential impacts with varying sludge radium concentrations and varying sludge application rates. With the sampled radium concentration, the number of allowable land applications varies from 3-6 applications with an increase limit of 0.4 pCi/g. Should the radium concentration in the village's sludge double, only 1 land application will be allowed at this limit. Radium would then become the limiting parameter that controls the number of land applications. It is our opinion that the increase limit of 0.4 pCi/g is therefore too stringent for our community because the limited number of land applications would likely make farmers uninterested in Manhattan's biosolids, and thus land application would no longer be a practical option.

With an increase limit of 1.0 pCi/g and with the sampled radium concentration, the number of allowable land applications varies from 9-15 applications. Should the radium concentration in the village's sludge double, 4 land applications will be allowed at this limit. Four land applications are too restrictive should the sludge radium concentration double. However, if the sludge radium concentration stays near its current concentration, the number of allowable land applications would be in a reasonable range, and therefore land

application would remain practical for the farmers. Therefore, the Village of Manhattan supports an increase limit of 1.0 pCi/g.

The sensitivity analysis also considers cost impacts of the proposed regulations. If land application is no longer practical due to the proposed stringent radium limit, then landfilling of the sludge will be required. Under the proposed regulations, if the sludge radium concentration is less than 50 pCi/g, then the sludge can be disposed of in a sanitary landfill. Manhattan would have to pay transportation and landfill tipping costs for this disposal method. Sludge disposal in a sanitary landfill would result in a cost increase of about 45% to the village as compared to land application. In addition, the combination of Manhattan's sludge and other communities forced to landfill their sludge will further decrease the limited landfill capacity in northeastern Illinois.

Under the proposed regulations, if the sludge radium concentration is greater than 50 pCi/g, then the sludge must be disposed of in a Naturally-Occurring Radioactive Materials (NORM) site. The closest NORM site to Manhattan is in Bristol, Wisconsin, which is nearly 100 miles away. Manhattan would have to pay increased transportation and landfill tipping costs for this disposal method. Sludge disposal at a NORM site would result in a cost increase of about 145% to the village as compared to land application. This tremendous cost increase would be difficult to absorb. Since Manhattan's sludge radium concentration is already near 50 pCi/g with only one sample, we propose a sludge radium concentration limit of at least 100 pCi/g in order to avoid the requirement for NORM site disposal. In addition, the combination of Manhattan's sludge and other communities forced to dispose of their sludge at this NORM facility will further decrease the limited capacity of this specialized NORM site.

Based on the results of the cost analysis, it is clear that the proposed increase limit of 0.4 pCi/g is too stringent for our community due to the resulting dramatic cost increase. Cost escalations ranging from 72%-145% would be difficult to bear, especially during these challenging economic times.

Fourth, we believe that the proposed regulations target communities such as ours. Because we utilize groundwater from deep wells where the natural radium concentration in the groundwater is higher, the restrictive radium limit places inequitable economic hardship on the Village of Manhattan and other small municipalities. Larger municipalities, especially those that receive water from Lake Michigan, will not be adversely affected by the proposed radium limits. It will be left for small communities like the Manhattan to bear significantly higher sludge disposal costs with a smaller user base to support an order of magnitude cost increase, which is unfair.

Fifth, the Village of Manhattan is currently paying off the $5,250,000 debt service for our radium water treatment plants. These treatment plants were constructed to comply with IEPA's public water supply standards. We believe that it is unfair for the state to impose additional economic hardships for radium wastewater compliance while the village is still financially impacted by radium water compliance. Furthermore, the anticipated growth of the village was factored in to meet the bond payments for the water treatment plants. Because this growth has stalled out due to the housing market crash, the bond payments are further cumbersome to Manhattan's financial status. Any additional costs would further exacerbate the financial condition of the village.

Finally, in regard to the regulation of radium in biosolids, it is the opinion of Manhattan that IEMA should be the technical advisory agency and IEPA should be the management agency for ensuring compliance with the radium regulations via sludge permitting. Radium would simply become another monitored parameter added to the Village's sludge permit, which would be monitored by current IEPA staff. Licensing by IEMA is unnecessary for production of biosolids with radium, and separate reporting to IEMA will require that agency to add staff unnecessarily, further negatively impacting the state budget.

IMPACTS OF PROPOSED SLUDGE RADIUM REGULATIONS

SENSITIVITY ANALYSIS

Run a sensitivity analysis to determine the number of allowable land applications with various sludge production totals, radium concentrations, and application rates; also determine the cost impacts for land application, sanitary landfill disposal, and NORM site disposal.

LAND APPLICATION COSTS

	SLUDGE PRODUCED (dry tons/year)	SLUDGE RADIUM CONCENTRATION (pCi/g)	SLUDGE APPLICATION RATE (dry tons/acre)	RADIUM CONCENTRATION INCREASE (pCi/g)	NO. OF LAND APPLICATIONS @ 0.4 pCi/g LIMIT	NO. OF LAND APPLICATIONS @ 0.75 pCi/g LIMIT	NO. OF LAND APPLICATIONS @ 1.0 pCi/g LIMIT	SLUDGE PRODUCED (wet cy/year)	APPROXIMATE LAND DISPOSAL RATE ($/wet cy)	APPROXIMATE LAND DISPOSAL COST ($/year)	RADIUM TESTING COST ($/year)	TOTAL COST ($/year)
50% Minimum	31.144	21.7	3.0	0.033	12	22	30	160	$20.00	$3,202	$450	$3,652
Minimum	62.288	43.3	3.0	0.066	6	11	15	320	$20.00	$6,404	$450	$6,854
Average	69.975	43.3	4.0	0.088	4	8	11	360	$20.00	$7,194	$450	$7,644
Maximum	79.221	43.3	5.0	0.110	3	6	9	407	$20.00	$8,144	$450	$8,594
200% Maximum	158.442	86.6	5.0	0.220	1	3	4	814	$20.00	$16,289	$450	$16,739

SANITARY LANDFILL DISPOSAL COSTS

	SLUDGE PRODUCED (dry tons/year)	SLUDGE RADIUM CONCENTRATION (pCi/g)	SLUDGE PRODUCED (wet tons/year)	HAULING RATE TO LANDFILL ($/wet ton)	SANITARY LANDFILL TIPPING FEE ($/wet ton)	LANDFILL DISPOSAL COST ($)	RADIUM TESTING COST ($/year)	TOTAL COST ($/year)	COST RELATIVE TO LAND DISPOSAL (%)
50% Minimum	31.144	21.7	142	$4	$30	$4,743	$450	$5,193	142%
Minimum	62.288	43.3	283	$4	$30	$9,486	$450	$9,936	145%
Average	69.975	43.3	318	$4	$30	$10,657	$450	$11,107	145%
Maximum	79.221	43.3	360	$4	$30	$12,065	$450	$12,515	146%
200% Maximum	158.442	86.6	720	$4	$30	$24,130	$450	$24,580	147%

NATURALLY-OCCURRING RADIOACTIVE MATERIALS (NORM) WASTE DISPOSAL SITE COSTS

	SLUDGE PRODUCED (dry tons/year)	SLUDGE RADIUM CONCENTRATION (pCi/g)	SLUDGE PRODUCED (wet tons/year)	HAULING RATE TO NORM SITE ($/wet ton)	NORM DISPOSAL SITE TIPPING FEE ($/ton)	NORM SITE DISPOSAL COST ($)	RADIUM TESTING COST ($/year)	TOTAL COST ($/year)	COST RELATIVE TO LAND DISPOSAL (%)
50% Minimum	31.144	21.7	142	$18	$40	$8,211	$450	$8,661	237%
Minimum	62.288	43.3	283	$18	$40	$16,421	$450	$16,871	246%
Average	69.975	43.3	318	$18	$40	$18,448	$450	$18,898	247%
Maximum	79.221	43.3	360	$18	$40	$20,886	$450	$21,336	248%
200% Maximum	158.442	86.6	720	$18	$40	$41,771	$450	$42,221	252%